

AMENDMENTS TO THE CLAIMS:

The listing of claims shown below will replace all prior versions, and listings, of claims in the Application:

1. (Original) A method for separating particles in a medium, the particles having differing dielectric constants, comprising the steps of:

providing a medium having a dielectric constant between the dielectric constants of the particles,

subjecting the particles in the media to an optical gradient field, and

separating the particles.

2. (Original) The method of claim 1 wherein the optical gradient field comprises an expanding optical gradient field.

3. (Original) The method of claim 2 wherein the expanding optical gradient field constitutes an expanding area of illumination.

4. (Original) The method of claim 1 wherein the illumination has a constant intensity.

5. (Original) The method of claim 1 wherein the optical gradient field comprises a moving optical gradient field.

6. (Original) The method of claim 5 wherein the moving optical gradient field includes a jerk motion.
7. (Original) The method of claim 1 wherein the optical gradient field increases monotonically.
8. (Original) The method of claim 7 wherein the monotonic increase is linear.
9. (Original) The method of claim 7 wherein the monotonic increase is not linear.
10. (Original) The method of claim 1 wherein the separation occurs in media on a slide.
11. (Original) The method of claim 1 wherein the separation occurs in a microfluidic channel.
12. (Original) The method of claim 11 wherein the microfluidic channel includes a T junction.
13. (Original) The method of claim 11 wherein the microfluidic channel includes a Y junction.
14. (Original) The method of claim 11 wherein the microfluidic channel includes a H junction.

15. (Original) The method of claim 11 wherein the microfluidic channel includes a X junction.

16. (Original) The method of claim 11 wherein the separation occurs at two or more junctions.

17. (Original) The method of claim 1 wherein the separation is based solely on the application of the optical gradient field.

18-22. (Cancelled)

23. (New) A method for separating particles in a medium, the particles having differing dielectric constants, comprising the steps of:

providing a medium having a dielectric constant that is greater than the dielectric constants of a portion of the particles and less than the dielectric constants of another portion of the particles;

illuminating the medium with a light pattern that varies in intensity so as to cause the particles having dielectric constants greater than the dielectric constant of the medium to move toward a portion of the light pattern with a higher intensity and the particles having dielectric constants less than the dielectric constant of the medium to move toward the portion of the light pattern with a lower intensity.

24. (New) The method of claim 23, wherein the particles having dielectric constants greater than the dielectric constant of the medium move in a direction that is

opposite to the movement of particles having dielectric constants less than the dielectric constant of the medium.

25. (New) The method of claim 24, wherein the particles are cells.